U.S. Department of the Interior
Bureau of Land Management
White River Field Office
73544 Hwy 64
Meeker, CO 81641

ENVIRONMENTAL ASSESSMENT

NUMBER: CO-110-2006-092-EA

CASEFILE/PROJECT NUMBER: COD-035679, COD-052141

PROJECT NAME: APDs for nine (9) wells---PCU 297-10A1, PCU 297-10A2, PCU 297-10A3, PCU 297-10A4, PCU 297-10A5, PCU 297-10A6, PCU 297-10A7, PCU 297-10A8, PCU 297-10A9

LEGAL DESCRIPTION: T.2S., R.97W., 6th P.M., SESE sec.10 (*surface location all 9 wells*),
SESE sec.10 (prod. zone A1, A3),
NESE sec.10 (prod. zone A2),
SWSW sec.11 (prod. zone A4),
NENE sec.15 (prod. zone A5, A6),
NWNE sec.15 (prod. zone A7),
SWSE sec.10 (prod. zone A8, A9)

APPLICANT: ExxonMobil Oil Corporation

ISSUES AND CONCERNS (optional): None

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES:

Background/Introduction: On-site conducted on 10/6/05.

Proposed Action: The applicant proposes to drill nine (9) wells from the same well pad. An additional 200' (40'right-of-way (ROW) x 200') of new access road would be constructed (total acres=0.18). The well pad size would be approximately 530' x 450' (5.84 ac.) with an adjacent production pad along the access road approximately 80' x 200' (0.37 ac.). Two steel pipelines (6"gas & 3"water) would be buried adjacent to access road for 6400' (ROW approx. 40' [20'addional ROW]) to a tie in point with existing pipelines. Pipeline ROW would overlap with new access road ROW and upgrading of 1.1 mi. of existing route to minimize new surface disturbance during construction/burial of pipelines. Approximate surface disturbance of the pipelines and upgrading of existing route would be 7.3 acres. Total acres of new surface disturbance on BLM would be approximately 13.3 acres (includes cut/fill slopes).

ExxonMobil committed mitigation is as follows:

- The maximum grade of the access road would not exceed 3%.
- Turnouts would be installed every 1000 ft. or intervisible.
- Corrugated Metal Pipes (CMPs) would be placed as needed. Surfacing material would be hauled over existing roads from a source not yet identified.
- All roadside and well location cut and fill slopes will be revegetated immediately after construction with the seed mixture(s) specified in the conditions of approval. Such revegetation will be either temporary or permanent.
- Revegetation operations will start immediately following the completion of recontouring/dirt work operations.
- Reserve pit fencing will comply with BLM specifications as described in the BLM Gold Book (Fourth Edition, 2005). Reserve pit fence specifications will be included as part of the conditions of approval.
- All access roads and surface disturbing activities will conform to standards outlined in the BLM Gold Book, *Oil and Gas Surface Operating Standards for Oil and Gas Development* (Sept. 2005)
- The proposed access road would be flagged prior to construction.(delete) Staking is required prior to the onsite and APD submittal (2005 BLM Goldbook)
- Water would either be piped with surface lines or trucked over access road. Remaining clear water would be pumped or hauled forward from previous wells after surface casing is set.
- Location sub-grade will be constructed by normal cut and fill methods.
- Surfacing material would be trucked to the location from an outside source and placed as needed.
- Drill cuttings would be disposed of in the reserve or dry cutting pit and buried with at least 4' of cover. E & P waste would be handled as defined, prescribed or permitted by the COGCC Rules.
- Any drilling mud with greater than 1% diesel net weight would be hauled to a proper disposal site.
- An alternative to hauling would be solidification in the pit with method approved by the Colorado Oil and Gas Conservation Commission (COGCC).
- All mud cuttings will meet these requirements before being buried or removed from the location.
- All cuttings will have all harmful properties of the waste reduced or removed and the mobility of leachate constituents reduced or eliminated.
- The BLM will be contacted prior to testing the cuttings of the first well so that the BLM may witness the testing procedures.
- Trash, waste paper, and other garbage would be contained in a fenced trash cage and hauled to a commercial disposal site.
- Salts that are not used in the drilling fluid would be removed from the location by the supplier.
- Sewage from the trailer houses will be disposed of in a manner meeting the Rio Blanco County Regulations, as under the guidance of Colorado Water Quality Control Commission, Department of Public Health and Environment.

- Portable, self-contained chemical toilets will be provided for human waste disposal. Upon completion and as needed the toilet holding tanks will be pumped and the contents disposed of in an approved sewage disposal facility.
- Chemicals that are not used in the drilling and completion of the well would be removed from the location by the supplier.
- Drilling fluids would be allowed to evaporate in the reserve pit until the pit is dry enough for back filling.
- Water produced during tests would be disposed of in the reserve pit as per Onshore Order #7.
- Oil produced during tests would be stored in test tanks until sold, at which time it would be hauled from the site.
- In the event fluids in the pit do not evaporate in a reasonable time, the fluids would be hauled to a state approved disposal site or would be mechanically evaporated.
- The reserve pit would be fenced on three sides with 4 strand barbed wire during drilling and on the fourth side after the rig is released.
- No camps, airstrips, etc. would be constructed.
- All equipment and vehicles will be confined to the access road and well pad.
- Mud pits in the active circulation system would be steel pits. The reserve pit may be lined with an impermeable liner if needed to hold fluid.
- If snow is encountered, the snow would be removed before construction begins or the topsoil is disturbed, and placed downhill of the proposed topsoil stockpile.
- All available topsoil would be stripped on well locations and access roads, prior to construction, and stockpiled for use in reclamation of the site. Topsoil stockpile would be clearly segregated from any spoil pile and placed where it can be easily retrieved without impact to natural features.
- Upon completion of the operation and disposal of trash and debris as prescribed above, pits would be backfilled and recontoured as soon as practical after they have dried.
- Unneeded disturbed surfaces remaining after completion to the surface production facilities would be shaped to match the surrounding terrain and seeded as specified by the BLM.
- When the well is abandoned, ExxonMobil would rehabilitate the road and location as per BLM specifications.
- Revegetation of the drill pad would comply with BLM specifications.
- Rehabilitation operations would start in a timely manner following the completion of operations, typically the following construction season.
- An archaeological investigation and report will be prepared for the proposed access road and well site by Archaeological-Environmental Research Corporation and submitted to the BLM.
- Completed wells on this pad will continue to produce during drilling operations per Exxon Mobil Simultaneous Operations guidelines.

Approximate date proposed action work would start is 12/1/06, scheduled one well per month, thru 8/1/07.

No Action Alternative: Proposed action would not be approved and no construction or drilling would take place and no environmental impacts would occur.

ALTERNATIVES CONSIDERED BUT NOT CARRIED FORWARD: None

NEED FOR THE ACTION: To respond to the request by the applicant to exercise lease rights to construct access road, well pad, and install pipelines to develop hydrocarbon reserves.

PLAN CONFORMANCE REVIEW: The Proposed Action is subject to and has been reviewed for conformance with the following plan (43 CFR 1610.5, BLM 1617.3):

Name of Plan: White River Record of Decision and Approved Resource Management Plan (ROD/RMP).

Date Approved: July 1, 1997

Decision Number/Page: Page 2-5

Decision Language: "Make federal oil and gas resources available for leasing and development in a manner that provides reasonable protection for other resource values."

AFFECTED ENVIRONMENT / ENVIRONMENTAL CONSEQUENCES / MITIGATION MEASURES:

STANDARDS FOR PUBLIC LAND HEALTH: In January 1997, Colorado Bureau of Land Management (BLM) approved the Standards for Public Land Health. These standards cover upland soils, riparian systems, plant and animal communities, threatened and endangered species, and water quality. Standards describe conditions needed to sustain public land health and relate to all uses of the public lands. Because a standard exists for these five categories, a finding must be made for each of them in an environmental analysis. These findings are located in specific elements listed below:

CRITICAL ELEMENTS

AIR QUALITY

Affected Environment: The entire White River Resource area has been classified as either attainment or unclassified for all pollutants, and most of the area has been designated prevention of significant deterioration (PSD) class II. The proposed action is not located within a ten mile radius of any special designation air sheds or non-attainment areas. The air quality criteria pollutant likely to be most affected by the proposed actions is the level of inhalable particulate matter, specifically particles ten microns or less in diameter (PM_{10}) associated with fugitive dust. In addition, slight increases in the following criteria pollutants: carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, and sulfur dioxide may also occur during construction

due to the combustion of fossil fuels associated with construction operations. Also, non-criteria pollutants such as visibility, nitric oxide, air toxics (e.g. benzene) and total suspended particulates (TSP) may also experience slight short term increases as a result of the proposed actions (no national ambient air quality standards have been set for non-criteria pollutants). Unfortunately, no monitoring data is available for the survey area. However, it is apparent that current air quality near the proposed location is good because only one location on the western slope (Grand Junction, CO) is monitoring for criteria pollutants other than $PM_{10.}$ Furthermore, the Colorado Air Pollution Control Division (APCD) estimates the maximum PM_{10} levels (24-hour average) in rural portions of western Colorado like the Piceance Basin to be near 50 micrograms per cubic meter ($\mu g/m^3$). This estimate is well below the National Ambient Air Quality Standard (NAAQS) for PM_{10} (24-hour average) of 150 $\mu g/m^3$.

Environmental Consequences of the Proposed Action: Cumulative impacts detrimental to air quality in the Piceance Creek Basin can be expected as carbon monoxide, ozone (secondary pollutant), nitrogen dioxide, particulate matter, and sulfur dioxide levels are elevated due to increased oil and gas development. Construction equipment producing elemental and organic carbon via fuel combustion combined with surface disturbing activities that leave soils exposed to eolian processes will both increase production of particulate matter (PM_{10}) during construction. Elemental and organic carbon existing in the air as PM_{10} can reduce visibility and increase the potential of respiratory health problems to exposed parties. However, following initial construction, suggested mitigation, and successful interim reclamation, criteria pollutant levels should return to near pre-construction levels.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour in populated areas. Disturbed areas will be restored to original contours, and revegetated as outlined in the vegetation portion of this EA. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.

To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Requirements for interim reclamation are outlined in the water quality section of this document. If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting/Curlex and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short durations (e.g.

during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

CULTURAL RESOURCES

Affected Environment: The proposed well pad has been inventoried at the Class III (100% pedestrian) level (Metcalf 2005, Compliance Dated 10/21/2004) with no cultural resources identified in the well pad area.

The proposed well tie pipelines have been inventoried at the Class III (100% pedestrian) inventory (Bott 2004, Compliance Dated 11/8/2004) with no cultural resources identified along he pipeline route.

Environmental Consequences of the Proposed Action: The proposed well pad, 200 feet of new access road, and well tie pipelines will not impact any known cultural resources.

Environmental Consequences of the No Action Alternative: There would be no new impacts to cultural resources under the No Action Alternative.

Mitigation: 1. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

2. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

3. The proposed up grade of the existing two track and the well tie pipelines must remain within area inventoried for the Love Ranch 16" water/gas pipeline right of way for its entire length.

INVASIVE, NON-NATIVE SPECIES

Affected Environment: Noxious weeds known to occur in the project area include houndstongue (*Cynoglossum officinale*), mullein (*Verbascum thapsus*), Russian, spotted and diffuse knapweeds (*Centaurea sp*), bull thistle (Cirsium vulgare), yellow toadflax (*Linaria vulgaris*) and black henbane (*Hyoscyamus niger*). The invasive alien annual cheatgrass occurs throughout the project area in association with unrevegetated earthen disturbance along roads, wells, and pipelines. The Magnolia area is a veritable hot bed for noxious weed infestations due primarily to the continuous earthen disturbance which has and continues to occur there.

Environmental Consequences of the Proposed Action: The proposed action will create about 13 acres of new earthen disturbance, which if it is not revegetated with desirable species and /or treated with herbicides to eradicate noxious weeds/ cheatgrass, will be invaded and dominated by noxious weeds/cheatgrass, increasing the potential for fire and the consequent further proliferation of cheatgrass. Noxious weeds could also spread from the project sites to surrounding native rangelands resulting in a long term negative impact. The resulting proliferation of noxious weeds/cheatgrass will perpetuate a downward cycle of environmental degradation that will be largely irreversible. The will be a low likelihood of long term negative impact if the proposed mitigation is properly implemented.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

MIGRATORY BIRDS

Affected Environment: There are a number of migratory birds that fulfill nesting functions in the mixed shrub and pinyon-juniper types traversed by this project during the months of May, June, and July, including several species identified as having higher conservation interest by the Rocky Mountain Bird Observatory, Partners in Flight program (i.e., Brewer's sparrow, gray flycatcher, black-throated gray warbler, juniper titmouse). Because the project area is situated immediately adjacent to existing forms of disturbance and/or is composed

of mixed shrub communities encroached with pinyon-juniper regeneration or mature stands with strongly altered canopies, neither shrubland or pinyon-juniper associates attain strong abundance or full representation.

Although this high plateau area has no open water or wetland areas that support or attract waterfowl use, the development of reserve pits that contain drilling fluids have attracted waterfowl use, at least during the migratory period (i.e., local records: mid-March through late May; mid-October through late November) and likely have similar attraction for migratory and resident passerines.

Environmental Consequences of the Proposed Action: Although the well access road, pipeline, and pad would directly affect about 9 acres of woodland habitat, these features incorporate or lie immediately adjacent to existing road and pipeline corridors. Woodland and shrubland habitats in close proximity to existing roads and utility corridors tend to support low breeding bird densities and, along with these stands' general character, do not represent favorable nesting habitat for woodland raptors. Construction and drilling associated with this well is scheduled to commence in early winter and is expected to continue for many months. This period would begin prior to and extend through the migratory bird nesting season. The proposed action is not expected to directly disrupt any migratory bird nest effort and ongoing well development would deter intolerant birds from initiating nests in nearby habitats.

There have been several recent instances of migratory waterfowl having contacted drilling or frac fluids stored in reserve pits during or after completion operations and are suffering mortality in violation of the Migratory Bird Treaty Act. The extent and nature of the problem is not well defined, but is being actively investigated by the federal agencies and the companies. Until the vectors of mortality are better understood, management measures must be conservative and relegated to preventing bird contact with frac and drilling fluids that may pose a problem.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to disrupt the breeding activities of migratory birds or result in direct bird mortality.

Mitigation: It will be the responsibility of the operator to effectively preclude migratory bird access to, or contact with, reserve pit contents that possess toxic properties (i.e., through ingestion or exposure) or have potential to compromise the water-repellent properties of birds' plumage. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird contact with pit contents and meet BLM's approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to initiation of drilling activities. The BLM-approved method will be applied whenever such pits contain fluids other than fresh water. All lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.

THREATENED, ENDANGERED, AND SENSITIVE ANIMAL SPECIES (includes a finding on Standard 4)

Affected Environment: *Affected Environment*: There are no animals listed, proposed, or candidate to the Endangered Species Act, nor animals considered sensitive by the BLM, that are known to inhabit or derive important benefit from the areas potentially influenced by the proposed action.

Environmental Consequences of the Proposed Action: Pad and road construction and drilling/completion operations would have no conceivable influence on special status species or associated habitat.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to influence special status species or associated habitats.

Mitigation: None.

Finding on the Public Land Health Standard for Threatened & Endangered species: The proposed and no-action alternatives would have no influence on populations or habitats of animals associated with the Endangered Species Act or BLM sensitive species and, as such, would have no influence on the status of applicable land health standards.

WASTES, HAZARDOUS OR SOLID

Affected Environment: There are no known hazardous or other solid wastes on the subject lands. No hazardous materials are known to have been used, stored or disposed of at sites included in the project area.

Environmental Consequences of the Proposed Action: No listed or extremely hazardous materials in excess of threshold quantities are proposed for use in this project. While commercial preparations of fuels and lubricants proposed for use may contain some hazardous constituents, they would be stored, used and transported in a manner consistent with applicable laws, and the generation of hazardous wastes would not be anticipated. Solid wastes would be properly disposed of.

Environmental Consequences of the No Action Alternative: No hazardous or other solid wastes would be generated under the no-action alternative.

Mitigation: The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

WATER QUALITY, SURFACE AND GROUND (includes a finding on Standard 5)

Affected Environment: Surface Water: The proposed action is located entirely within the Lower Piceance Creek watershed (fifth level watershed). Sixth and seventh level watersheds likely to be impacted by the proposed actions are Dudley Gulch, McKee Gulch, and Miller Hill

Draw catchment areas. Piceance Creek is a perennial tributary to the White River which is a tributary to the Green River in Utah (tributary to the Colorado River).

Surface water quality in Piceance Creek is described as mixed bicarbonate in the upper drainages and as sodium bicarbonate in the lower drainages (BLM, 2003). Chemical components found in surface waters are attributed to the weathering of surficial materials in the area. The principal ionic constituents include sodium, calcium, magnesium, bicarbonate, sulfate, chloride, potassium, and fluoride (Tobin 1987). Sodium, bicarbonate, and sulfate levels generally decrease during the spring snowmelt runoff because of the increased amount of water, while chloride and fluoride remain essentially constant. Calcium and magnesium concentrations show small decreases, and potassium increases during the snowmelt. During the irrigation season, sodium becomes concentrated, and calcium and magnesium concentrations increase. Sediment is probably the most visible water-quality characteristic of streams in the Piceance Basin. The more sediment suspended in the water, the more turbid or muddy the stream appears. In addition, the characteristics of the landscape, such as steep hillsides, valley floors, alluvial fans, and gullies are the result of sediment erosion, transport, and deposition (Norman 1987).

The "Status of Water Quality in Colorado –2006" (CDPHE 2006b) and Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin (CDPHE 2005a) were reviewed for information relating to drainages impacted by the proposed action. Table 1 shows the affected watersheds and associated water quality stream segments to be impacted by the proposed actions.

Table 1:

Watershed	Stream segment	Drainage Basin	Use Protected	303(d) listed	M&E listed	Impairment	Severity
Dudley Gulch	16	White River	UP	Not listed			
McKee Gulch							
Miller Hill Draw							

Stream segment 16 of the White River Basin is defined as all tributaries to Piceance Creek, including all wetlands, lakes, and reservoirs, from the source to the confluence with the White River, except for the specific listings in segments 17, 19, and 20. The State has classified stream segment 16 as "Use Protected". The antidegredation review requirements in the Antidegredation Rule are not applicable to waters designated use-protected. For those waters, only the protection specified in each reach will apply. Stream segment 16 has been further designated by the state as being beneficial for the following uses: Warm Aquatic Life 2, Recreation 2, and Agriculture (CDPHE, 2006b).

Newly promulgated Colorado Regulations Nos. 93 and 94 (CDPHE 2006c and 2006d, respectively) were also reviewed for information related to the proposed project area drainages. Regulation No. 93 is the State's Section 303(d) list of water-quality-limited segments requiring Total Maximum Daily Loads (TMDLs). The 2006 303(d) list of segments needing development of TMDLs (CDPHE 2006c) includes two segments within the White River - segment 9b, specifically the Flag Creek portion (for impairment from selenium with a low priority for TMDL

development) and segment 22, specifically West Evacuation Wash, and Douglas Creek (sediment impairments with a low priority for TMDL development). Regulation 94 is the State's list of water bodies identified for monitoring and evaluation (CDPHE 2006d), to assess water quality and determine if a need for TMDLs exists. The list includes two White River segments that are potentially impaired – 9 (Flag Creek-pH) and 22 (Soldier Creek- sediment).

Ground Water: Surface geology at all of the proposed locations is Tertiary in age (Uinta Formation) and consists primarily of sandstone and siltstone. The Uinta Formation is the principle geologic formation of the Upper Piceance Basin Aquifer. Water quality of the Upper Piceance Basin Aquifer is generally characterized by dissolved calcium, magnesium, and bicarbonate along the rim of the Piceance Basin; and by sodium, magnesium, bicarbonate, and sulfate in the central part of the Basin (Tobin, 1987). Alluvial material associated with the Piceance Creek Alluvial Aquifer is found in the drainage bottom adjacent to Piceance Creek. Alluvial aquifers are recharged by deeper ground water as well as infiltration of snowmelt and rain. Water quality in alluvial aquifers is primarily a function of local geology and communication with deeper groundwater in bedrock aquifers.

A review of the US Geological Survey Ground Water Atlas of the United States (Topper et al., 2003) was done to assess ground water resources at the location of the proposed action. The proposed action is located in the Piceance Creek structural basin. Primary hydrogeologic units within the Piceance Basin are listed in the following table.

Summary of Hydrogeologic Units						
Hydrogeologic Unit	**Stratigraphic Unit**	**Physical Description**	**Thickness (ft)**	**Hydraulic Conductivity (ft/day)**	**Yield (gpm)**	**TDS mg/L**
Upper Piceance Basin aquifer	Uinta Formation	sandstone, fractured siltstone, fractured marlstone	0 – 1,400	<0.2 to >1.6	1- 900	500-1,000
Mahogany confining unit	Green River Formation	dolomitic marlstone and shale	500-1,800	<0.01	<25	NL
Lower Piceance Basin aquifer	Green River Formation	shale, fine-grained sandstone, fractured marlstone	0 – 1,870	<0.1 to >1.2	1-1,000	1,000-10,000
Basal confining unit	Green River Formation, Wasatch Formation	claystone, siltstone, clay rich oil shale, marlstone, channel sandstone	0-6,800	<0.01	<10-100	NL
Fort Union aquifer	Fort Union Formation	Coarse-grained sandstone	Very thin	NL	NL	NL
Mesaverde aquifer	Mesaverde Group	sandstone interbedded shale and coal	Averages 3,000	0.0001-1.0	NL	NL
Mancos confining unit	Mancos Shale	mostly shale but Frontier Sandstone may be local aquifer	>7,000	NL	NL	NL
Abbreviations: ft = feet, approx = approximate, avg = average, gpm = gallons per minute, mg = milligrams, L = liters, and NL = not listed.						

Table information from Topper et al. (2003).

The Piceance Creek drainage basins upper and lower aquifers are separated by the semi-confining Mahogany Zone. Information presented in Topper et al. (2003) indicates the following approximate depths to potentiometric surfaces (elevation at which water level would have stood in tightly cased wells, 1985) within hydrogeologic units: upper Piceance basin aquifer 550 feet, lower Piceance basin aquifer 350 feet, and Mesaverde aquifer 250 feet (based on a surface elevation of 7,250 feet). Water well data from the Colorado Division of Water Resources (Topper et al., 2003) indicated that in central Rio Blanco County water wells are uncommon. Based on existing water well data near the project area, total concentration of dissolved constituents in the upper and lower aquifers is generally lower than 1000 milligrams per liter.

Environmental Consequences of the Proposed Action: Surface Water: Clearing, grading, and soil stockpiling activities may temporarily alter overland flow and natural groundwater recharge patterns. Near-surface soil compaction caused by construction equipment and vehicles could reduce the soil's ability to absorb water and could increase surface runoff and the potential for ponding. The magnitude and duration of potential impacts to surface runoff and groundwater recharge would depend on soil depth, soil type, vegetation type and density, slope, aspect, erosive force of rainfall or surface runoff, and duration and extent of construction activities. Impacts would likely be greatest immediately following commencement of construction activities and would naturally decrease thereafter due to reclamation activities.

Toxic metals and organic substances that are relatively insoluble in water may be adsorbed on the surface of sediments and transported with sediment to surface waters further deteriorating water quality in stream segment 16 of the White River Basin. In addition, mechanical means of produced water evaporation may result in overspray which would likely result in increased salt deposits (notably sodium and chlorides). Salt deposition resulting from overspray may adversely impact the health of surrounding vegetation reducing effective ground cover and increasing the potential for soil erosion. In addition, salts deposited from overspray could be carried down gradient to surface waters of the Colorado River system deteriorating water quality.

Ground Water: In the event of any leaks or spills, local ground water may be adversely impacted as runoff could carry contaminates down gradient to alluvial aquifers such as the Piceance Creek alluvium which is situated hydrologically down gradient from the proposed actions. Potential for ground water contamination increases if fractures in confining units are formed. Hydraulic conductivity increases exponentially along fracture zones resulting in rapid transport of fluids/contaminants in these areas. The upper and lower Piceance Basin aquifers have differing water qualities, mixing will degrade water quality in the upper aquifer which is generally of better quality. Storage or surface disposal methods (e.g. evaporation ponds) for produced water would also elevate potential for contaminating ground water of the Upper Piceance Basin Aquifer, and Piceance Creek Alluvial Aquifer.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

Surface Water: All surface disturbing activities will strictly adhere to "Gold Book" fourth edition surface operating standards for oil and gas exploration and development (copies of the "Gold Book" fourth edition can be obtained at the WRFO). The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, interim reclamation will be required *once drilling is completed*. To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the BLM). Interim reclamation of well pads will commence as follows:

- Stockpiled topsoil and spoil piles will be separated to prevent mixing during reclamation efforts.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.
- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces outside the anchors and brought to near pre-construction contours.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in re-contouring efforts.
- The recontoured area will be seeded with a BLM approved seed mixture (see Vegetation section), and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex, etc) to provide additional protection to topsoil and help retain soil moisture.
- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured area to act as flow deflectors

and sediment traps. Woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.

- To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris.
- The operator will be required to monitor all reclaimed areas for signs of erosion and the presence of noxious and invasive plant species. If problems arise the operator will consult with the BLM for further assistance.
- It will be the responsibility of the operator to continue revegetation/reclamation efforts until the reclamation is proven successful (as determined by the BLM).

If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be segregated, signed, and covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Cut and fill slopes will be stabilized by vegetative and non-vegetative practices as identified in Exxon's approved Stormwater Management Plan. Interim reclamation will proceed as outlined above once drilling is completed.

Upon final abandonment of well pads, 100% of all disturbed surfaces (access roads and pad locations) will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture (see Vegetation section). Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative techniques (e.g. biodegradable fabrics, woody debris, straw waddles etc). All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover) to help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

Finding on the Public Land Health Standard for water quality: Stream segment 16 of the White River Basin currently meet water quality standards set by the state. Many of the upper tributaries which are ephemeral and flow in direct response to storm events do not meet the standards during periods of flow. Following suggested mitigation measures, water quality in the affected stream segment should continue to meet standards.

WETLANDS AND RIPARIAN ZONES (includes a finding on Standard 2)

Affected Environment: The closest channel system supporting riparian vegetation is Piceance Creek, which is separated by a minimum 1.5 miles of ephemeral channel from the proposed action (Miller Hill Draw and Dudley Gulch). This portion of Piceance Creek (and about 10 miles downstream) is private and State-owned and stream function and morphology is heavily modified by irrigation practices (e.g., not strongly represented by obligate forms of riparian vegetation, moderately entrenched/undersized floodplains).

Environmental Consequences of the Proposed Action: This ridgeline project is separated from the nearest riparian system by at least 1.5 miles of ephemeral channel. Pad, pipeline, and road construction would have no direct impact on riparian/wetland resources. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Piceance Creek channel or its associated riparian resources.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have any direct or indirect influence on downstream riparian communities.

Mitigation: None.

Finding on the Public Land Health Standard for riparian systems: Downstream portions of Piceance Creek are private with the nearest BLM-administered reach about 10 miles downstream. These private portions of the creek are stable, but due to the factors listed above, their functional status is generally at-risk. Neither the proposed or no-action alternative would have any effective influence on the function or condition of the Piceance Creek channel, its riparian expression, or its land health status.

CRITICAL ELEMENTS NOT PRESENT OR NOT AFFECTED:

No ACEC's, flood plains, prime and unique farmlands, or Wild and Scenic Rivers, threatened, endangered or sensitive plants exist within the area affected by the proposed action. For threatened, endangered and sensitive plant species Public Land Health Standard is not applicable since neither the proposed nor the no-action alternative would have any influence on populations of, or habitats potentially occupied by, special status plants. There are also no Native American religious or environmental justice concerns associated with the proposed action.

NON-CRITICAL ELEMENTS

The following elements **must** be addressed due to the involvement of Standards for Public Land Health:

SOILS (includes a finding on Standard 1)

Affected Environment: The following data is a product of an order III soil survey conducted by the Natural Resource Conservation Service (NRCS). Table 3 highlights important soil characteristics. A complete summary of this information can be found at the White River Field Office.

Table 3:

Soil Number	Soil Name	Slope	Acres w/in 30m	Ecological site	Salinity	Run Off	Erosion Potential	Bedrock
33	Forelle loam	3-8%	0.11	Rolling Loam	<2	Medium	Moderate	>60
70	Redcreek-Rentsac complex	5-30%	21.17	PJ woodlands/PJ woodlands	<2	Very high	Moderate to high	10-20
73	Rentsac channery loam	5-50%	8.99	Pinyon-Juniper woodlands	<2	Rapid	Moderate to very high	10-20
96	Veatch channery loam	12-50%	96	Loamy Slopes	<2	Medium	Moderate to very high	20-40

Control surface use (CSU-1) "fragile soils" have been mapped throughout the proposed project area. However, after on-site observations and assessing slope from a topographic map it was determined that no surface disturbing activities will occur on slopes greater than 35%. Thus, controlled surface use stipulations will not apply.

Environmental Consequences of the Proposed Action: Clearing and grading of well pads, pipeline right of ways and access roads will remove protective vegetative cover from the affected soils accelerating the erosion process. Grading, trenching, and backfilling activities could cause mixing of the soil horizons and could result in reduced soil fertility reducing revegetation potential. Water erosion of soils associated with construction activities will likely result in a net loss of valuable topsoil by sheet, rill, and gully erosion. Eroded topsoil and subsoil may increase sedimentation to surface waters down gradient disturbed areas. Increased sedimentation could adversely impact water quality and aquatic life.

Any leaks or spills of environmentally unfriendly substances (e.g. diesel fuel) could compromise the productivity of affected soils. Decreased soil productivity will hinder reclamation efforts and leave soils further exposed to erosional processes.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity.

Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.

All disturbed surfaces will be restored to natural contours and revegetated with the suggested seed mixture outlined in the Vegetation section of this EA. Interim reclamation will follow the mitigation outlined in the Water Quality portion of this document.

Finding on the Public Land Health Standard for upland soils: Infiltration and permeability rates will be reduced with increased soil compaction. Following proper mitigation techniques and reclamation procedures, soil health will remain unchanged from current conditions.

VEGETATION (includes a finding on Standard 3)

Affected Environment: The proposed action occurs in mid and late seral pinyon-juniper woodland.

Environmental Consequences of the Proposed Action: Two primary negative impacts will/could occur as a result of access road, pad and pipeline construction; 1) The 13 acres disturbed as a result of pipeline, access road and pad construction will accelerate the rate of plant community fragmentation which is presently occurring in this area of Piceance Basin. This impact is unmitigated in the short term and likely, longer. 2) In terms of plant community composition, structure and function, the principal negative impact over the long term would occur if cheatgrass or noxious weeds are allowed to establish and proliferate on the disturbed areas resulting from pipeline and access road construction. Drilling multiple wells from a single pad, while limiting disturbance and plant community fragmentation over both the short and long term, will not completely mitigate the negative impact of the proposed action upon native plant communities.

Environmental Consequences of the No Action Alternative: There will be no change from the present situation.

Mitigation: Promptly revegetate all disturbed areas with Native Seed mix #3. Revegetation will commence immediately after construction and will not be delayed until the following fall. **Debris will not be scattered on the pipeline until after seeding operations are completed.**
Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.

Native Seed Mix # 3		
Plant Species	PLS/Lb	Ecological Site
Western wheatgrass (Rosanna) Bluebunch wheatgrass (Whitmar) Needle and thread Indian ricegrass (Rimrock) Fourwing saltbush (Wytana)	2 2 1 2 1	Gravelly 10"-14", Pinyon/Juniper Woodland, Stony Foothills, 147 (Mountain Mahogany)

If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Wildlife, Aquatic and Wildlife, Terrestrial)*:* Upland plant communities currently meet the Standard and are expected to continue to under the proposed action.

WILDLIFE, AQUATIC (includes a finding on Standard 3)

Affected Environment: Piceance Creek, separated by a minimum 1.5 miles of ephemeral channel from the proposed action, supports the nearest aquatic habitat. The nearest BLM-administered reach is about 10 miles downstream of this point. Stream function and morphology on these downstream reaches are heavily modified by summer-long irrigation practices, but the stream persists in supporting small populations of leopard frog, speckled dace, and flannelmouth sucker.

Environmental Consequences of the Proposed Action: This pad is situated on the crest of a ridge separated from the nearest aquatic system by a minimum 1.5 miles of ephemeral channel. Pad and road construction would have no direct impact on aquatic habitats. With the application of BMPs associated with soil erosion there is no reasonable likelihood that fugitive sediments would have any influence on the function or condition of the Piceance Creek channel or its associated aquatic values.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have any direct or indirect influence on downstream aquatic habitat.

Mitigation: None.

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Terrestrial): Downstream portions of Piceance Creek are private with the nearest BLM-administered reach about 10 miles downstream. Neither the proposed or no-action alternative would any effective influence on the function or condition of the Piceance Creek channel, its aquatic habitat values, or its land health status.

WILDLIFE, TERRESTRIAL (includes a finding on Standard 3)

Affected Environment: The proposed pad is situated on a wooded ridgeline and would incorporate an existing well field access road and a pipeline corridor. The site is composed variously of a mature woodland community with a mixed shrub understory whose canopy has been substantially altered (i.e., mature components reduced with exaggerated regeneration) by a long history of personal woodcutting activity and younger age class stands that have colonized former sagebrush-dominated parks. This area is encompassed by deer severe winter range that is normally occupied during the late winter and early spring months. However, snow

accumulations on these relatively level and higher elevation ridgeline positions typically limit deer use after January, with subsequent spring use typically involving April through mid-May.

As prescribed by BLM during the on-site, woodlands in the project locale were surveyed for evidence of raptor nest activity by a wildlife consultant (report on file at the White River Field Office, Meeker). A pair of closely associated accipiter nests (1 inactive and 1 dilapidated) were found low in a steep draw separated from the proposed pad edge by about 800 lateral feet and 100 vertical feet (the nest below). No further evidence of woodland raptor nesting was found within areas potentially influenced by pad, road, or pipeline development.

Non-game wildlife using this area are typical and widely distributed in extensive like habitats across the Resource Area and northwest Colorado; there are no narrowly endemic or highly specialized species known to inhabit those lands potentially influenced by this action.

Environmental Consequences of the Proposed Action: The proposed action represents an incremental expansion of industrial development on Magnolia's deer severe winter range. Because this well involves negligible addition to the existing road network and is situated in a developed field, additive avoidance-related effects (i.e., behavioral avoidance and habitat disuse; increased energetic demands) during the period of big game occupation would be relatively minor. Well development and completion would be expected to overlap with the winter use period and would normally be subject to a Condition of Approval that allows activity deferral for up to 60 days during the January through April severe winter period (i.e., a semblance of big game severe winter range stipulation TL-08). Because of prolonged development timeframes (i.e., successive drilling of wells), this COA would be impractical to apply in this instance. Offsetting the effects of this proposed project on wildlife resources, including big game, this multi-well pad would substantially reduce the extent and distribution of forage and cover resources dedicated to access roads, pipelines, and pads associated with the alternate development of up to 9 separate well pads and reduces the cumulative effects of increasing road density and the expansion of industrial and recreational activity on these winter and spring ranges. The long-term occupation of about 6 acres of foraging area (pad and road) and temporary reductions in woody shrub and woodland growth on about 3 acres for the pipeline would have minor localized influence on big game forage availability, but these reductions have cumulative connotations. Final pipeline reclamation and interim reclamation on the well pad would help offset herbaceous forage losses and accelerate the reestablishment of woody forage and cover components.

The proposed action would directly affect about 9 acres of predominantly pinyon-juniper woodlands that lie immediately adjacent to existing well access roads and pipeline corridors. Woodlands that would be most influenced by road traffic and well development consist of heavily modified ridgeline stands and submature stands that, in BLM's experience, have only limited potential for use by nesting raptors. The nest site found during nest surveys is positioned low in a draw and is well removed (and beyond line-of-sight) from disruptive influences associated with pad development. Well development activities are expected to begin prior to the beginning of the raptor nesting season (December), but extended drilling and completion activities would overlap the nesting timeframes (through August) and would deter intolerant birds from initiating new nests in nearby habitats.

Environmental Consequences of the No Action Alternative: There would be no action authorized that would have potential to affect resident wildlife populations or associated habitat.

Mitigation: The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

Finding on the Public Land Health Standard for plant and animal communities (partial, see also Vegetation and Wildlife, Aquatic): On a landscape scale, the project area meets the public land health standards for terrestrial animal communities. The proposed action is considered an incremental addition to those lands dedicated to mineral development, but would not detract measurably from continued meeting of the land health standard at the landscape scale.

OTHER NON-CRITICAL ELEMENTS: For the following elements, only those brought forward for analysis will be addressed further.

Non-Critical Element	NA or Not Present	Applicable or Present, No Impact	Applicable & Present and Brought Forward for Analysis
Access and Transportation			X
Cadastral Survey	X		
Fire Management			
Forest Management			X
Geology and Minerals			X
Hydrology/Water Rights			X
Law Enforcement		X	
Noise			
Paleontology			
Rangeland Management			X
Realty Authorizations		X	
Recreation			X
Socio-Economics		X	
Visual Resources			X
Wild Horses	X		

ACCESS AND TRANSPORTATION

Affected Environment: BLM road 1172 bisects proposed pad location and is native surfaced.

Environmental Consequences of the Proposed Action: If pad is constructed as designed BLM road 1172 may be blocked to traffic.

Environmental Consequences of the No Action Alternative: None.

Mitigation: Assure traffic can continue to utilize BLM road 1172 by either allowing safe travel to pass over well pad or construct temporary route around pad to allow free flow of traffic.

FIRE MANAGEMENT

Affected Environment: The proposed well pad involves approximately 200 feet of new road construction/improvement that traverses through mature pinyon-juniper woodlands. The pad likewise is composed of pinyon-juniper woodlands, some of which consists of mature pinion juniper that will be removed from 6.21 acres to construct the pad.

The National Fire Plan calls for "firefighter and public safety" to be the highest priority for all fire management activities. In the pinion, juniper, and brush types common on the White River Resource Area, roads and other man-made openings are commonly used as fuel breaks or barriers to control the spread of both wildland and prescribed fires. By reducing the activity fuels created from this proposal, future fire management efforts in this area should be safer for those involved and more effective.

Environmental Consequences of the Proposed Action: Due to the existing tree cover of pinion and juniper, there will be a need for the operator to clear some of these trees. The proposed action will require the removal of a substantial amount of vegetation (approximately 10-20 tons/acre). If not adequately treated, these activity fuels will result in elevated hazardous fuels conditions and remain on-site for many years. These accumulations of dead material are very receptive to fire brands and spotting from wind driven fires and can greatly accelerate the rate of spread of the fire front. The road associated with this project may be used by the general public for a variety of uses, including access for fire wood gathering, hunting and other dispersed recreational activities. Increased public use of an area will nearly always result in an increased potential for man-caused wildland fires. If not treated the slash and woody debris will create an elevated hazardous dead fuel loading which could pose significant control problems in the event of a wildfire. Additionally there would be greater threat to the public, Exxon personnel, and fire suppression personnel.

Environmental Consequences of the No Action Alternative: None

Mitigation: The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil

size up to bowling ball size. This would effectively breakdown the woody fuel and scatter the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

FOREST MANAGEMENT

Affected Environment: The well pad, access road and pipeline are within mature pinyon/juniper woodlands. This stand is considered commercial based on quality production and accessibility. Within the White River Resource Management Plan a limit of 25 acres per year for clearcutting of woodlands is permitted. These stands are also used by the local population as a source of firewood and fence posts, and are authorized under personal use permits.

Environmental Consequences of the Proposed Action: Under the proposed action approximately 10 acres of woodland would be removed. The estimated volume of material removed is estimated at 160 cords. The removal of woodland resources has exceeded that established within the land use plan on a yearly basis, but is still within the decadal harvest level. Following reclamation pinions and junipers are expected to reoccupy the site and develop into mature woodlands. Establishment is expected to take up to 30 years and mature woodland would develop in 250+ years. With mitigation there would not be problems with disease/insects.

Environmental Consequences of the No Action Alternative: There would be no impacts.

Mitigation: Same as Fire Management.

GEOLOGY AND MINERALS

Affected Environment: The surface geologic formation of the well location is Uinta and ExxonMobil's targeted zone is in the Mesaverde. During drilling potential water, oil shale, sodium, and gas zones will be encountered from surface to the targeted zone. Aquifers that will be encountered during drilling are the Perched in the Uinta, the A-groove, B-groove and the Dissolution Surface in the Green River formation. These aquifer zones along with the Wasatch formation are known for difficulties in drilling and cementing. Oil shale and sodium resources are located in the Green River formation. The well pad is located on the down dip side of the Dudley Graben which may adversely affect down-hole drilling and completion. The bottom-hole locations are located on Federal oil and gas leases COD-035679 and COD-052141.

Environmental Consequences of the Proposed Action: The cementing procedure of the proposed actions isolates the formations and will prevent the migration of gas, water, and oil between formations. This includes oil shale and coal zones. However, conventional recovery of

the coals is not considered feasible at the depths that are encountered in the well. Development of this well will deplete the natural gas resources in the targeted formation

Environmental Consequences of the No Action Alternative: The natural gas resources in the targeted zone would not be recovered at this time.

Mitigation: None

HYDROLOGY AND WATER RIGHTS

Affected Environment: The proposed action is located in the Lower Piceance Creek Fifth level watershed. Stream flows in Piceance Creek and its tributaries generally peak in mid spring as a result of high elevation snowmelt and periodically during late summer and early fall in response to high intensity precipitation events. Approximately eighty percent of annual flows in Piceance Creek originates as discharge from alluvial and bedrock aquifers (Tobin, 1987). Ephemeral drainages flow only in direct response to snowmelt and intense summer and early autumn storms.

Approximately 98% of the precipitation in the Piceance Basin is lost to evapotranspiration. The remaining water runs off rapidly and replenishes streamflow or recharges bedrock and alluvial aquifers. Ground water recharge areas generally are located in higher parts of the drainage basin. The recharge moves slowly laterally and downward into the upper aquifer system, passes through the Mahogany zone (leaky confining unit) and enters the lower aquifer system through fractures and solution openings. The water in the upper and lower aquifers moves horizontally through the basin to the discharge areas. In the Piceance drainage basin, the water eventually moves upward back through the aquifer system where it discharges into the valley-fill alluvial aquifer or emerges as springs in the stream valleys (Taylor 1987). No springs have been identified within 0.5 miles of any surface disturbing activities associated with the proposed actions.

The stream banks of Piceance Creek are generally composed of sand, silt, and clay particles that are less than about one-tenth of an inch in diameter. The bank materials erode easily when stream discharge increases during peak flow conditions. Bank erosion is probably most prominent during the spring snowmelt when high flows persist for several days. The bank material absorbs a large amount of water, becomes soft and easily removable, and sloughs into the stream in large clumps. The stream bed of Piceance Creek is composed of silt, sand, gravel, and occasional cobbles, with pockets of fine material where the velocity of the stream generally is slow. Coarse streambed materials normally move only under peak flow conditions (Norman 1987).

Environmental Consequences of the Proposed Action: Improper drainage from well pads and access roads will elevate sediment production from disturbed areas. Increased sediment loads to local surface water drainages will result in a sediment rich system. Sediment rich systems are characterized by deposition and high width to depth ratios (W/D ratio) (wide shallow channels). As the W/D ratio increases, the hydraulic stress against the banks also increases and

bank erosion is accelerated. Increases in the sediment supply to the channel develop from bank erosion, reducing the systems capability to transport sediment. As a result, deposition occurs, further accelerating bank erosion, and the cycle continues (Rosgen, 1996).

Construction activities may disrupt natural surface and ground water flow patterns. Altered flow patterns could disrupt natural surface and ground water recharge/discharge patterns. Changes to natural recharge/discharge patterns could have adverse impacts on stream channel morphology, riparian areas and aquatic life.

Environmental Consequences of the No Action Alternative: None

Mitigation: Refer to mitigation in the Water Quality portion of this document.

PALEONTOLOGY

Affected Environment: The proposed well pad, access road and well tie pipelines are located in and area generally mapped as the Uinta Formation (Tweto 1979) which the BLM, WRFO has classified as a Condition I fossil formation meaning it is known to produce scientifically important fossil resources.

Environmental Consequences of the Proposed Action: If it should become necessary to excavate into the underlying rock formation to improve the existing two track road for access, build the new access road, level the well pad, excavate the reserve/blooie pit or bury the well tie pipelines there is a potential to impact scientifically important fossil resources.

Environmental Consequences of the No Action Alternative: There would be no new impacts to fossil resources under the No Action Alternative.

Mitigation: 1. All exposed rock outcrops in the project area shall be examined by an approved paleontologist with a report detailing the results of the inventory and any recommended mitigation shall be submitted to the BLM, WRFO prior to the initiation of construction.

2. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or

the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

3. If it becomes necessary to excavate into the underlying roc formation, at any time, to improve the existing two track, build the new access, level the pad excavate the reserve/blooie pit or bury the well tie pipeline a paleontological monitor shall be present prior to and during all such excavations.

RANGELAND MANAGEMENT

Affected Environment: The proposed action occurs within the Pat Johnson use area of the Little Hills allotment which is licensed for livestock use as follows:

Allotment	Permit #	Livestock # & Kind		Period of Use	Percent Public Land	Authorized Use (AUM)
Little Hills	051408	139	C	11/01-11/30	100	137
		277	C	12/01-12/31	100	282
		139	C	01/01-01/30	100	137

Environmental Consequences of the Proposed Action: There will be a net loss of 2 AUMs of forage production as a result of the proposed action.

Environmental Consequences of the No Action Alternative: There would be no change from the present situation

Mitigation: A twenty foot minimum width cattleguard with a gate next to it would be installed where the proposed access road intersects the allotment boundary fence in *T2S, R97W Sec 11, NWSW* prior to location and access road construction in accordance with BLM specifications.

The allotment boundary fence intersected by the pipeline in *T2S, R97W Sec 11,* will be braced to BLM specifications prior to cutting. A temporary wire gate will be constructed. This work will take place prior to pipeline ROW construction. A copy of the applicable BLM fence specifications will be included as part of the conditions of approval.

Reserve pit fencing will comply with BLM specifications as described in the BLM Gold Book (Fourth Edition, 2005). Reserve pit fence specifications will be included as part of the conditions of approval.

RECREATION

Affected Environment: The proposed action occurs within the White River Extensive Recreation Management Area (ERMA). BLM custodially manages the ERMA to provide for unstructured recreation activities such as hunting, dispersed camping, hiking, horseback riding, wildlife viewing and off-highway vehicle use.

The project areas area has been delineated/most resembles a Recreation Opportunity Spectrum (ROS) class of Semi-Primitive Motorized (SPM). SPM physical and social recreation setting is typically characterized by a natural appearing environment with few administrative controls, low interaction between users but evidence of other users may be present. SPM recreation experience is characterized by a high probability of isolation from the sights and sounds of humans that offers an environment that offers challenge and risk.

Environmental Consequences of the Proposed Action: The public will lose approximately 8 acres of dispersed recreation potential while wells are in operation. The public will most likely not recreate in the vicinity of these facilities and will be dispersed elsewhere. If action coincides with hunting seasons (September through November) it will most likely disrupt the experience sought by those recreationists.

With the introduction of new well pads and roads, an increase of traffic could be expected increasing the likihood of human interactions, the sights and sounds associated with the human environment and a less naturally appearing environment. After construction, the ROS will more resemble that of Roaded Natural.

Environmental Consequences of the No Action Alternative: No loss of dispersed recreation potential and no impact to hunting recreationists.

Mitigation: None.

VISUAL RESOURCES

Affected Environment: The proposed action would be located in an area with a VRM III classification. The objective of this class is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Environmental Consequences of the Proposed Action: The proposed action would be located on the side of a ridge, below sky line in a stand of Pinyon/Juniper. The proposed action would not be visible from the nearest route (RBC 5) that would be traveled by a casual observer. By painting all production facilities Juniper Green to blend with and mimic the surrounding vegetation, the level of change to the characteristic landscape would be low, and the objectives of the VRM III classification would be retained.

Environmental Consequences of the No Action Alternative: There would be no environmental impact.

Mitigation: All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

CUMULATIVE IMPACTS SUMMARY: Cumulative impacts from oil and gas development were analyzed in the White River Resource Area PRMP/FEIS. Current development, including the actions proposed in this EA, has not exceeded the foreseeable development analyzed in the PRMP/FEIS.

REFERENCES CITED:

Colorado Department of Public Health and Environment (CDPHE) Water Quality Control Commission (WQCC), 2005a. Regulation No. 37 Classifications and Numeric Standards for Lower Colorado River Basin. Amended December 12, 2005 and Effective March 2, 2006.

CDPHE-WQCC, 2006b. "Status of Water Quality in Colorado – 2006, The Update to the 2002 and 2004 305(b) Report," April 2006.

CDPHE-WQCC, 2006c. "Regulation No. 93, 2006 Section 303(d) List Water-Quality-Limited Segments Requiring TMDLs," effective April 30.

CDPHE-WQCC, 2006d. "Regulation No. 94, Colorado's Monitoring and Evaluation List," effective April 30.

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PERSONS / AGENCIES CONSULTED: None

INTERDISCIPLINARY REVIEW:

Name	Title	Area of Responsibility
Nate Dieterich	Hydrologist	Air Quality
Tamara Meagley	Natural Resource Specialist	Areas of Critical Environmental Concern
Tamara Meagley	Natural Resource Specialist	Threatened and Endangered Plant Species
Michael Selle	Archeologist	Cultural Resources Paleontological Resources
Mark Hafkenschiel	Rangeland Management Specialist	Invasive, Non-Native Species, Vegetation, Rangeland Management
Ed Hollowed	Wildlife Biologist	Migratory Birds
Ed Hollowed	Wildlife Biologist	Threatened, Endangered and Sensitive Animal Species, Wildlife
Melissa J. Kindall	Range Technician	Wastes, Hazardous or Solid; Wild Horses
Nate Dieterich	Hydrologist	Water Quality, Surface and Ground Hydrology and Water Rights
Ed Hollowed	Wildlife Biologist	Wetlands and Riparian Zones
Chris Ham	Outdoor Recreation Planner	Wilderness
Nate Dieterich	Hydrologist	Soils
Ed Hollowed	Wildlife Biologist	Wildlife Terrestrial and Aquatic
Chris Ham	Outdoor Recreation Planner	Access and Transportation
Ken Holsinger	Natural Resource Specialist	Fire Management
Robert Fowler	Forester	Forest Management
Paul Daggett	Mining Engineer	Geology and Minerals
Penny Brown	Realty Specialist	Realty Authorizations
Chris Ham	Outdoor Recreation Planner	Recreation
Keith Whitaker	Natural Resource Specialist	Visual Resources
Melissa J. Kindall	Range Technician	Wild Horses

Finding of No Significant Impact/Decision Record (FONSI/DR)

CO-110-2006-092-EA

FINDING OF NO SIGNIFICANT IMPACT (FONSI)/RATIONALE: The environmental assessment and analyzing the environmental effects of the proposed action have been reviewed. The approved mitigation measures (listed below) result in a Finding of No Significant Impact on the human environment. Therefore, an environmental impact statement is not necessary to further analyze the environmental effects of the proposed action.

DECISION/RATIONALE: It is my decision to approve the proposed action, with the addition of the mitigation measures listed below. This development, with mitigation, is consistent with the decisions in the White River ROD/RMP, and environmental impacts will be minimal.

MITIGATION MEASURES:

1. The operator will be responsible for complying with all local, state, and federal air quality regulations as well as providing documentation to the BLM that they have done so. To minimize production of fugitive particulate matter (fugitive dust) from associated access roads, vehicle speeds must not exceed 15 mph *or* dust plume must not be visible at appropriate designated speeds for road design. In addition, the application of a BLM approved dust suppressant (e.g. water or chemical stabilization methods) will be required during dry periods when dust plumes are visible at speeds less than or equal to 15 mph. Surfacing access roads with gravels will also help mitigate production of fugitive particulate matter. Land clearing, grading, earth moving or excavation activities will be suspended when wind speeds exceed a sustained velocity of 20 miles per hour in populated areas. Disturbed areas will be restored to original contours, and revegetated as outlined in the vegetation portion of this EA. Following seeding, woody debris cleared from the ROW will be pulled back over the pipeline to increase effective ground cover and help retain soil moisture.

2. To reduce production of fugitive particulate matter originating from well pads and associated stockpiled soils (long term storage) interim reclamation will be required. Requirements for interim reclamation are outlined in the water quality section of this document. If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be covered with biodegradable fabrics such as (but not limited to) jute netting/Curlex and seeded with a BLM approved seed mixture (see vegetation section of this document). Furthermore, soils stockpiled for short durations (e.g. during road/pipeline construction/maintenance) will be wetted during dry periods to reduce production of fugitive particulate matter.

3. Construction equipment will be maintained in good operating condition to ensure that engines are running efficiently. Vehicles and construction equipment with emission controls will also be maintained to ensure effective pollutant emission reductions.

4. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing historic or archaeological sites, or for collecting artifacts. If historic or archaeological materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear eligible for the National Register of Historic Places
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not necessary)
- a timeframe for the AO to complete an expedited review under 36 CFR 800-11 to confirm, through the State Historic Preservation Officer, that the findings of the AO are correct and that mitigation is appropriate.

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

5. Pursuant to 43 CFR 10.4(g) the holder of this authorization must notify the AO, by telephone, with written confirmation, immediately upon the discovery of human remains, funerary items, sacred objects, or objects of cultural patrimony. Further, pursuant to 43 CFR 10.4(c) and (d), you must stop activities in the vicinity of the discovery and protect it for 30 days or until notified to proceed by the authorized officer.

6. The proposed up grade of the existing two track and the well tie pipelines must remain within area inventoried for the Love Ranch 16" water/gas pipeline right of way for its entire length.

7. The operator will be required to monitor the project area for a minimum of three years post disturbance and eradicate all noxious and invasive species which occur on site using materials and methods approved in advance by the Authorized Officer.

8. It will be the responsibility of the operator to effectively preclude migratory bird access to, or contact with, reserve pit contents that possess toxic properties (i.e., through ingestion or exposure) or have potential to compromise the water-repellent properties of birds' plumage. Exclusion methods may include netting, the use of "bird-balls", or other alternative methods that effectively eliminate migratory bird contact with pit contents and meet BLM's approval. It will be the responsibility of the operator to notify the BLM of the method that will be used to eliminate migratory bird use two weeks prior to initiation of drilling activities. The BLM-approved method will be applied whenever such pits contain fluids other than fresh water. All

lethal and non-lethal events that involve migratory birds will be reported to a White River Field Office Petroleum Engineer Technician immediately.

9. The applicant shall be required to collect and properly dispose of any solid waste generated by the proposed actions.

10. The operator will be responsible for complying with all local, state, and federal water quality regulations (such as but not limited to Phase I Storm Water Permit, Army Corps Section 404 permit coverage, and Industrial Wastewater/Produced Water Permits).

11. Surface Water: All surface disturbing activities will strictly adhere to "Gold Book" fourth edition surface operating standards for oil and gas exploration and development (copies of the "Gold Book" fourth edition can be obtained at the WRFO). The operator will consult with the State of Colorado Water Quality Control Division regarding Stormwater Discharge Permits prior to commencing construction activities. Construction activities that disturb one acre or greater require a Stormwater Discharge Permit. Written documentation to the BLM Authorized Officer is required within 30 days of the APD approval date to indicate that appropriate permits have been obtained. Written documentation may be a copy of the Stormwater Discharge Permit or an official verification letter from the State Water Quality Control Division to the operator that includes the Permit Certification Number. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

12. The operator will consult with the US Army Corps of Engineers to obtain approval prior to discharging fill material into waters of the US in accordance with Section 404 of the Clean Water Act. Waters of the US are defined in 33 CFR Section 328.3. Written documentation to the BLM Authorized Officer is required within 45 days of the APD approval date to indicate that the US Army Corps of Engineers has been notified prior to construction or that 404 Permits have been obtained or are not required by the permitting agency. Written documentation may be a copy of the Pre-Construction Notification (PCN) Form or an official verification letter from the US Army Corps of Engineers to the operator stating that a permit has been issued or is not required for the activities in question. For further information contact Nate Dieterich, WRFO Hydrologist at 970-878-3831 or Nathan_Dieterich@blm.gov. Appropriate documents may be sent via electronic mail, faxed (970-878-3805), or mailed to Nate Dieterich at the above address.

13. To mitigate additional soil erosion at the well pad and potential increased sediment and salt loading to nearby surface waters, interim reclamation will be required *once drilling is completed*. To allow optimal opportunity for interim reclamation of well pads, all tanks and production facilities will be situated on the access road side of the well pad (unless otherwise approved by the BLM). Interim reclamation of well pads will commence as follows:

- Stockpiled topsoil and spoil piles will be separated to prevent mixing during reclamation efforts.
- Stockpiled topsoil segregated from spoil piles will be replaced during reclamation in its respective original position (last out, first in) to minimize mixing of soil horizons.

- Stockpiled soils (spoil and topsoil) will be pulled back over all disturbed surfaces outside the anchors and brought to near pre-construction contours.
- The operator will ensure stockpiled topsoil is evenly distributed over the **top** of spoil used in re-contouring efforts.
- The recontoured area will be seeded with a BLM approved seed mixture (see Vegetation section), and all slopes exceeding 5 % will be covered with wildlife friendly biodegradable fabrics (such as but not limited to Jute blankets, Curlex, etc) to provide additional protection to topsoil and help retain soil moisture.
- Following seeding and placement of biodegradable fabrics, woody debris cleared during initial construction will be pulled back over the recontoured area to act as flow deflectors and sediment traps. Woody debris will be evenly distributed over the entire portion of the reclaimed area and will not account for more than 20% of total ground cover.
- To eliminate livestock utilization of reclaimed areas prior to successful reclamation, a 4-strand BLM Type-D barbed wire fence with braced wooden corners will be constructed around all reclaimed portions of the well pad including cut and fill slopes following placement of woody debris.
- The operator will be required to monitor all reclaimed areas for signs of erosion and the presence of noxious and invasive plant species. If problems arise the operator will consult with the BLM for further assistance.
- It will be the responsibility of the operator to continue revegetation/reclamation efforts until the reclamation is proven successful (as determined by the BLM).

14. Ground Water: Shallow aquifers shall be protected from hydrofracturing and the production of oil and gas by installation and cementing of surface and intermediate casing. Any groundwater produced from the Fort Union or Mesaverde Formations will be hauled off and disposed of due to poor water quality and therefore preventing adverse impacts to valuable surface and ground water resources. Environmentally unfriendly substances (e.g. diesel) must not be allowed to contact soils. The use of spill-guards (or equivalent spill prevention equipment) under and around pumping equipment is suggested to intercept such contaminants prior to infiltrating soils and contaminating ground water. Furthermore, all pits shall be lined and all wastes associated with construction and drilling will be properly treated and disposed of.

15. If interim reclamation is not practical (e.g. completion of drilling operation will require an extended period time (multiple well pads)), stockpiled topsoil will be segregated, signed, and covered with biodegradable fabrics such as (but not limited to) jute netting and seeded with a BLM approved seed mixture (see vegetation section of this document). Cut and fill slopes will be stabilized by vegetative and non-vegetative practices as identified in Exxon's approved Stormwater Management Plan. Interim reclamation will proceed as outlined above once drilling is completed.

16. Upon final abandonment of well pads, 100% of all disturbed surfaces (access roads and pad locations) will be restored to pre-construction contours, and revegetated with a BLM preferred seed mixture (see Vegetation section). Natural drainage patterns will be restored and stabilized with a combination of vegetative (seeding) and non-vegetative techniques (e.g. biodegradable fabrics, woody debris, straw waddles etc). All available woody debris will be pulled back over recontoured areas (woody debris will not account for more that 20% of total surface cover) to

help stabilize soils, trap moisture, and provide cover for vegetation. Monitoring and additional reclamation efforts will persist until reclamation is proven successful (as determined by the BLM).

17. The operator will be responsible for segregating topsoil material and backfilling of topsoil in its respective original position (last out, first in) to assist in the reestablishment of soil health and productivity.

18. Erosion and sediment control measures will be installed on all slopes exceeding five percent to mitigate soil loss. Erosion and sediment control measures will be maintained until stream banks and adjacent upland areas are stabilized.

19. All disturbed surfaces will be restored to natural contours and revegetated with the suggested seed mixture outlined in the Vegetation section of this EA. Interim reclamation will follow the mitigation outlined in the Water Quality portion of this document.

20. Promptly revegetate all disturbed areas with Native Seed mix #3. Revegetation will commence immediately after construction and will not be delayed until the following fall. **Debris will not be scattered on the pipeline until after seeding operations are completed.** Seed mixture rates are Pure Live Seed (PLS) pounds per acre. Drill seeding is the preferred method of application.

Native Seed Mix # 3		
Plant Species	PLS/Lb	Ecological Site
Western wheatgrass (Rosanna)	2	
Bluebunch wheatgrass (Whitmar)	2	Gravelly 10"-14", Pinyon/Juniper
Needle and thread	1	Woodland, Stony Foothills, 147
Indian ricegrass (Rimrock)	2	(Mountain Mahogany)
Fourwing saltbush (Wytana)	1	

21. If construction/development occurs between April 15 and November 15, the operator will be required to water or surface access roads to reduce airborne dust and damage to roadside vegetation communities

22. The use of interim reclamation techniques will be used to the extent practicable on the pad such that: 1) all available topsoil material would be used to rehabilitate recontoured cut and fill slopes and areas outside the anchors (maintaining the viability of the soils for final reclamation), 2) production facilities are located to maximize the extent of surface disturbance available for recontouring and reclamation after completion operations and through the productive life of the well (e.g., where access road enters pad), and 3) all disturbed areas are reseeded and, if necessary, effectively fenced to control livestock use once well completion activities have been finalized (this includes cut and fill slopes of roads and trial application on the roadbeds themselves).

23. Assure traffic can continue to utilize BLM road 1172 by either allowing safe travel to pass over well pad or construct temporary route around pad to allow free flow of traffic.

24. The operator has two options for treatment of slash from this project. A hydro-ax or other mulching type machine could be used to remove the trees. The machines are capable of shredding trees up to 12" in diameter and 15' tall as well as mowing brush like a conventional brush beater. It generally leaves small branches and pieces of wood from pencil size up to bowling ball size. This would effectively breakdown the woody fuel and scatter the debris thereby eliminating any hazardous fuel load adjacent to the new road and well pad. The other option would be to cut trees and have them removed for firewood, posts, or other products. The branches and tops should be lopped and scattered to a depth of 24 inches or less. If the boles of the trees are left for collection by the general public, they should be stacked in small manageable piles along the roadside or pad to facilitate removal. For material brought back onto the pipeline r-o-w the material should be evenly scattered, so as to not create jackpots, and the material should not exceed 5 tons /acre.

25. All exposed rock outcrops in the project area shall be examined by an approved paleontologist with a report detailing the results of the inventory and any recommended mitigation shall be submitted to the BLM, WRFO prior to the initiation of construction.

26. The operator is responsible for informing all persons who are associated with the project operations that they will be subject to prosecution for knowingly disturbing paleontological sites, or for collecting fossils. If fossil materials are uncovered during any project or construction activities, the operator is to immediately stop activities in the immediate area of the find that might further disturb such materials, and immediately contact the authorized officer (AO). Within five working days the AO will inform the operator as to:

- whether the materials appear to be of noteworthy scientific interest
- the mitigation measures the operator will likely have to undertake before the site can be used (assuming in situ preservation is not feasible)

If the operator wishes, at any time, to relocate activities to avoid the expense of mitigation and/or the delays associated with this process, the AO will assume responsibility for whatever recordation and stabilization of the exposed materials may be required. Otherwise, the operator will be responsible for mitigation cost. The AO will provide technical and procedural guidelines for the conduct of mitigation. Upon verification from the AO that the required mitigation has been completed, the operator will then be allowed to resume construction.

27. If it becomes necessary to excavate into the underlying roc formation, at any time, to improve the existing two track, build the new access, level the pad excavate the reserve/blooie pit or bury the well tie pipeline a paleontological monitor shall be present prior to and during all such excavations.

28. A twenty foot minimum width cattleguard with a gate next to it would be installed where the proposed access road intersects the allotment boundary fence in *T2S, R97W Sec 11, NWSW* prior to location and access road construction in accordance with BLM specifications.

29. The allotment boundary fence intersected by the pipeline in *T2S, R97W Sec 11,* will be braced to BLM specifications prior to cutting. A temporary wire gate will be constructed. This work will take place prior to pipeline ROW construction. A copy of the applicable BLM fence specifications will be included as part of the conditions of approval.

30. Reserve pit fencing will comply with BLM specifications as described in the BLM Gold Book (Fourth Edition, 2005). Reserve pit fence specifications will be included as part of the conditions of approval.

31. All permanent (onsite for six [6] months or longer) structures, facilities and equipment placed onsite shall be painted Munsell Soil Color Chart Juniper Green or equivalent within six months of installation.

NAME OF PREPARER: Keith Whitaker

NAME OF ENVIRONMENTAL COORDINATOR: Caroline Hollowed

SIGNATURE OF AUTHORIZED OFFICIAL: Marvin Henderson for Kent Walter
Field Manager

DATE SIGNED: 7/19/06

ATTACHMENTS: General Location Map of the Proposed Action

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Location of Proposed Action
CO-110-2006-092-EA